# Memorandum

TO: Keith Gordon (USACE) and Taylor Brelsford (AECOM)
FROM: Robert (Nick) Enos, Permitting Manager
CC: Jeff Bruno (ADNR)
SUBJECT: Approach for Incorporating Advanced Water Treatment in the EIS
DATE: July 10, 2015

Donlin Gold has recently completed a study of Advanced Water Treatment (AWT) as an option for allowing treatment and discharge of excess water that would otherwise be retained. Based on the results of the AWT study, Donlin Gold has determined that the proposed project should be revised to incorporate AWT, and will form the basis of our Alaska Pollutant Discharge Elimination System (APDES) permit application. In parallel, these changes must be disclosed through the Environmental Impact Statement (EIS), currently being prepared by the US Army Corps of Engineers (USACE). This memo summarizes the proposed approach for informing the EIS.

In the currently available Preliminary Draft EIS (PDEIS), Alternative 2 is described as "Donlin Gold's Proposed Action". Alternative 5D (Treat and Discharge Some Excess Water) is essentially the same as Alternative 2 in every respect, except that more water would be treated and discharged, resulting in less water retained in the Tailings Storage Facility (TSF) pond throughout the mine life. Two options were included for water treatment under Alternative 5D, including: High-Density Sludge (HDS) treatment and flow augmentation (option 1) or advanced water treatment (option 2). The Alternative 5D advanced water treatment option was not fully described or analyzed in the PDEIS since the USACE was awaiting completion of Donlin's AWT study.

To complete the analysis for the DEIS, Donlin is submitting to the USACE a description of the AWT system, including an updated water balance, and the amount of excess water

that is expected to be treated and discharged. In addition, Donlin is informing the USACE that AWT is our preferred approach, will form the basis of our APDES permit application, and should be considered the applicant's proposed action. The decision to include AWT as part of the proposed project will also require changes to the Project Plans of Operations and other relevant supporting documents, as well as some of the other permit applications (a list will be provided under separate cover). We also recommend that all documents supporting Essential Fish Habitat (EFH), Endangered Species Act (ESA), and National Historic Preservation Act (NHPA) Section 106 consultation be revised, as needed, so that all descriptions of the proposed action are accurate and consistent.

With these changes in mind, we request that the USACE and AECOM:

1) Fully revise Alternative 2 (proposed action) to include the AWT component previously analyzed under 5D.
2) Eliminate Alternative 5D as a separate alternative.

The AWT system that Donlin is proposing would replace the HDS water treatment system previously described in the proposed action of the PDEIS. The details of the AWT process are described in detail in the enclosed report (Hatch, July 2015), but generally consist of iron co-precipitation in a high rate clarifier (HRC), followed by greensand filtration and reverse osmosis (RO). This system satisfies the goal of producing treated water that meets discharge requirements, while also allowing treatment of excess water from the Upper Contact Water Dam (CWD), Tailings Storage Facility (TSF), and Seepage Recovery System (SRS). The ability to treat and discharge this excess water will enhance site water management and operational flexibility, as well as better control the accumulation of water in the TSF. We believe that these enhancements meet the original intent of the excess water discharge alternative, by limiting the accumulation of water in mine facilities during operations.

Enclosed with this memo, please find the following supporting documents:

- Advanced Water Treatment Options Report, Hatch, July 2015
- Design Memo: Water Resources Management Plan - Advanced Water Treatment, BGC Engineering, June 2015

We look forward to providing additional information as requested to support the USACE in incorporating these changes into the DEIS, and are available to provide an information presentation to the USACE, AECOM, and EIS Cooperating Agencies if requested.